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ABSTRACT

To obtain evidence on the status of and changes in functional literacy, the National Right-to-Read Effort funded mini-assessments of the functional literacy of 17-year-olds in 1974 and 1975. The exercises were selected by a panel of reading specialists, based on the criteria that the exercises represent the types of reading materials encountered in everyday life and that all 17-year-old students should be able to answer them correctly. Desired performance level, highest expected performance, and minimally adequate performance were specified for the assessment. This report summarizes the findings relative to each of these performance standards in the original National Assessment reading study (1971) and the 1974 and 1975 follow-up studies. Results are given separately by region, sex, size and type of community, and parents' educational levels. (AA)

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FUNCTIONAL LITERACY

BASIC READING PERFORMANCE

A Brief Summary and Highlights of an
Assessment of 17-Year-Old Students in 1974 and 1975

Prepared for
The National Right to Read Effort
400 Maryland Avenue, SW
Washington, D.C. 20202

In Cooperation With
The National Assessment of Educational Progress
(A Project of the Education Commission of the States)
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CS 003 145

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

Roy H. Forbes
Director

1976

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PREFACE

THE MINI-ASSESSMENT OF FUNCTIONAL LITERACY

Of all the skills children are taught in school, most Americans would probably agree that reading is the most essential skill for them to acquire if they are to be normal functioning adults in our society. Yet, in spite of this fundamental importance of reading in adult life, the common belief among employers as well as the general public is that every year thousands of American youths are dropping out of or graduating from high school unable to read well enough to be considered functionally literate.

This inadequacy has been suspected for some time; but, in order to obtain more concrete evidence on the status and changes in functional literacy, the National Right to Read Effort awarded a grant to the Education Commission of the States for the National Assessment of Educational Progress (NAEP) to conduct in two successive years (1974 and 1975) a Mini-Assessment of Functional Literacy (MAFL). The major goal of the MAFL has been to determine the extent of functional literacy among all 17-year-old students in America and among those subclassifications of 17-year-old students defined in Appendix A.

The exercises used in the MAFL were selected by a panel of reading specialists serving on the Right to Read staff on the dual criteria that the exercises represent the types of reading materials encountered in everday life and that all 17-year-old students should be able to answer them correctly. The MAFL exercises are described briefly in Appendix B.

In addition, the NAEP/MAFL staff and a panel of reading specialists[1] classified each MAFL exercise according to its format and according to the reading behavior[2] it was meant to elicit. The format and behavior classifications of the MAFL exercises are defined briefly in Appendix C.

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[1]Dr. Alton Raygor, University of Minnesota; Dr. Carl Wallen, Arizona State University (Tempe); Dr. Ruth Hartly, California State College (Sacramento); Dr. Donald Gallo, Central Connecticut State College.

[2]A reading behavior can be regarded as a manifestation of a reading skill.

ACKNOWLEDGMENTS

Many people and organizations have made substantial contributions to the two mini-assessments of functional literacy (MAFL). Not the least of these are the state and local school systems and the responding students themselves, without whose cooperation these studies would not have been possible. Express gratitude goes to Dr. Ruth Love, former director of the National Right to Read Effort, at whose instigation the MAFL came to be, and to Ms. Helen O'Leary, Right to Read Project Officer for the MAFL. Thanks also go to the other members of the Right to Read staff who contributed their efforts to the success of the MAFL.

The execution of the MAFL was carried out by the following organizations, consultants and National Assessment personnel. To them a sincere thank you.

- For sampling and administration: Research Triangle Institute, Research Triangle Park, N.C.
- For packaging (of exercises) and scoring: Measurement Research Center, Iowa City, Iowa.
- For consultation on the classification of the MAFL exercises: Dr. Alton Raygor, University of Minnesota; Dr. Ruth Hartley, California State College (Sacramento); Dr. Carl Wallen, Arizona State University (Tempe); and Dr. Donald Gallo, Central Connecticut State College.
- For data processing support: Ms. Patrice Gunderson and Mr. John Kalk of National Assessment.
- For statistical analysis consultation and technical review of this report: Dr. Donald Searls and Dr. Robert Larson of National Assessment.

Roy H. Forbes
Project Director

INTRODUCTION

SOME STANDARDS FOR EVALUATING THE FUNCTIONAL READING SKILLS OF 17-YEAR-OLD STUDENTS

This Brief Summary and Highlights is intended for those primarily interested in only the more general aspects of the Mini-Assessment of Functional Literacy (MAFL).[1]

All too often, data are presented without being related to a standard and thus defy any sort of interpretation. The MAFL data are presented in relation to three different standards, each casting the functional reading skills of 17-year-old students in a somewhat different light.

- The desired performance level is the standard we would like all 17-year-old students to achieve. Indeed, we would like for all 17-year-old students to be able to answer all the MAFL exercises correctly. The MAFL exercises were chosen on this criterion. Any reported percentage representing a reading achievement of 17-year-old students less than 100% falls short of this standard.

- The highest expected level of performance is the best performance we can reasonably expect based on the performance of a group of known superior readers who have achieved above the 90th percentile on a standardized reading test. Here, the percentages of students responding correctly are converted to a percentage of the superior reader performance. Any converted percentage less than 100% means that the group of 17-year-old students fell short of this standard.

- The minimally adequate performance standard is the lowest level above which 17-year-old studnets can perform and still be considered functionally literate. Right to Read

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[1]Those familiar with the basic techniques of statistics and measurement or are interested in the more detailed aspects of the MAFL are referred to the Statistical/Documentary Report -- Summary Volume (Denver, Colo.: National Assessment of Educational Progress, 1976). An optional companion, Handbook of the Mini-Assessment of Functional Literacy (Denver, Colo.: National Assessment of Educational Progress, forthcoming), will be available.

has determined that 17-year-old students must be able to correctly answer at least 75% of the MAFL exercises if they are to be considered functionally literate.

Chapter 1 gives an overview of the MAFL results; Chapters 2, 3 and 4, respectively, summarize the MAFL results relative to the three standards discussed above, and Chapter 5 highlights several exercises for which the results are unique.

CHAPTER 1

RESULTS OF THE MINI-ASSESSMENT OF FUNCTIONAL LITERACY IN BRIEF

The general trends of the results for the Mini-Assessment of Functional Literacy (MAFL) are given here for all 17-year-old students (national) and the subclassifications[1] of these students by region (Southeast, West, Central, Northeast); sex (male, female); race (black, white); highest level of education attained by at least one parent (no high school, some high school, graduated from high school, post-high school);[2] and size/type of community (low metro, extreme rural, small place, medium city, main big city, urban fringe, high metro).[3] The results are given in greater detail in the following chapters.

The Truncated MAFL[4]

From 1971 to 1974, 17-year-old students at the national level and those in the Central region; both sexes; both races; all but the post-high-school group in the parental-education classifications; and in the low-metro, rural and small-places size/type-of-community (STOC) classifications improved significantly[5] in functional reading. By 1975, two of these groups, some high school and rural, had declined enough that their net change from 1971 was statistically indeterminant. Four groups whose improvements over the first three years had been indeterminant (the Southeast

---

[1]All classifications of 17-year-old students are defined briefly in Appendix A.

[2]In the classification of 17-year-old students by the level of their parents. education, "high school" refers to grades 9-12 (see definitions in Appendix A).

[3]Low metro and high metro refer, respectively, to schools whose students have parents predominantly of low- and high-socioeconomic status (see definitions in Appendix A).

[4]Of the 86 exercises that comprise the complete MAFL administered in 1974 and 1975, 64 had been used in National Assessment's 1971 fall reading assessment of 17-year-old students. This subset of exercises, called the truncated MAFL, provides data on the functional reading levels of 17-year-old students at three time points: 1971, 1974 and 1975.

[5]There is no greater probability than 0.050 that the improvement was due to chance.

and West regions, post-high-school parental-education group and urban-fringe STOC group) improved enough additionally by 1975 that their total improvement was significant. Thus, by 1975, significant improvement had been made by 14 of the 20 groups for which we report results.

The Complete MAFL

The overall functional-reading achievements of no group of 17-year-old students either improved or declined significantly from 1974 to 1975 on the complete set of 86 MAFL exercises. Several groups, however, did show significant changes in functional-reading achievements on certain format and behavior classifications for the exercises.[6]

- Improvement in their ability to read passages was registered by 17-year-old students at the national level and by those in the West region, males, whites and those in the graduated-from-high-school and post-high-school parental-education groups. Improvement was likewise registered in their ability to understand word meanings by 17-year-old students at the national level and by those in the Southeast and West regions, both sexes, both races, those in the graduated-from-high-school and post-high-school parental-education groups and those in the small-places and high-metro STOC groups. Seventeen-year-old students in the West improved on gleaning significant facts.

- The high-metro group declined in ability to read charts, maps and graphs. A loss in their ability to read forms was registered by 17-year-old students in the main-big-city STOC group, the post-high-school parental-education group and females. Rural 17-year-old students declined in ability to read reference materials. Rural 17-year-old students and those in the some-high-school parental-education group declined in their ability to comprehend the main ideas and organization of what they read. The high-metro STOC group declined in ability to draw inferences.

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[6]The rationale for the format and behavior classifications of the MAFL exercises is given in the Preface. They are defined briefly in Appendix C.

CHAPTER 2

FUNCTIONAL-READING SKILLS RELATIVE TO THE DESIRED PERFORMANCE LEVEL

Ordinarily, when we report the percentages of students who answer exercises correctly, we have not been able to evaluate them in terms of performance quality since we have had no standard upon which to base an evaluation. When the reading specialists serving on the staff of the National Right to Read Effort selected the exercises to be used in the Mini-Assessment of Functional Literacy (MAFL), one of the selection criteria was that it would be desirable that every 17-year-old student be able to answer every exercise correctly. Therefore, the first standard against which we evaluate the functional reading skills of the various groups of 17-year-old students[1] is the desired performance level (DPL) of 100%.

In this chapter, a difference between a group's mean percentage of success (mean of the percentages that answered the individual exercises correctly) and 100% is the group's shortfall from the DPL standard.

The Truncated MAFL[2]

We report each group's significant percentage-point changes[3] in functional-reading achievement from 1971 to 1975 and its mean percentage of success for 1975.

---

[1]All groups of 17-year-old students are defined briefly in Appendix A.

[2]Of the 86 exercises that comprise the complete MAFL administered in 1974 and 1975, 64 had been used in National Assessment's 1971 fall reading assessment of 17-year-old students. This subset of exercises, called the truncated MAFL, provides data on the functional reading skills of 17-year-old students at three points in time.

[3]All improvements mentioned by number in the text of this chapter have attained the 0.050 significance level (no greater than a 0.050 probability that the observed improvement was due to chance or random error). No observed declines in functional reading attained this significance level.

National.	Up 2.2 to 85.9.
Region.	Southeast up 3.3 to 82.7. West up 2.9 to 86.1. Central up 1.8 to 87.6 Northeast -- indeterminant, 86.4.
Sex.	Males up 3.0 to 85.2. Females up 1.4 to 86.5.
Race.	Blacks up 4.8 to 74.1. Whites up 2.1 to 87.8.
Parental education.	No high school up 4.0 to 78.6. Some high school -- indeterminant, 80.5. Graduated high school up 2.0 to 85.8 Post high school up 1.1 to 89.0.
Size/type of community.	Low metro up 4.9 to 80.8. Extreme rural -- indeterminant, 83.3. Small places up 2.9 to 86.1. Medium city -- indeterminant, 85.3. Main big city -- indeterminant, 85.4. Urban fringe up 3.4 to 88.2. High metro -- indeterminant, 89.0.

Exhibit 2-1 graphically shows the mean percentage of success for each group in 1971, 1974 and 1975. A plus sign (+) at the top of a group's 1974 or 1975 bar indicates that the mean percentage of success for that year represents a significant improvement over the group's 1971 level.

Exhibit D-1 in Appendix D shows in tabular form the mean percentage of success for each group in 1971, 1974 and 1975; the

EXHIBIT 2-1. Mean Percentages of Success -- Desired Performance Level
(Average of the Percentages of 17-Year-Old Students Answering
the Individual Exercises Correctly)

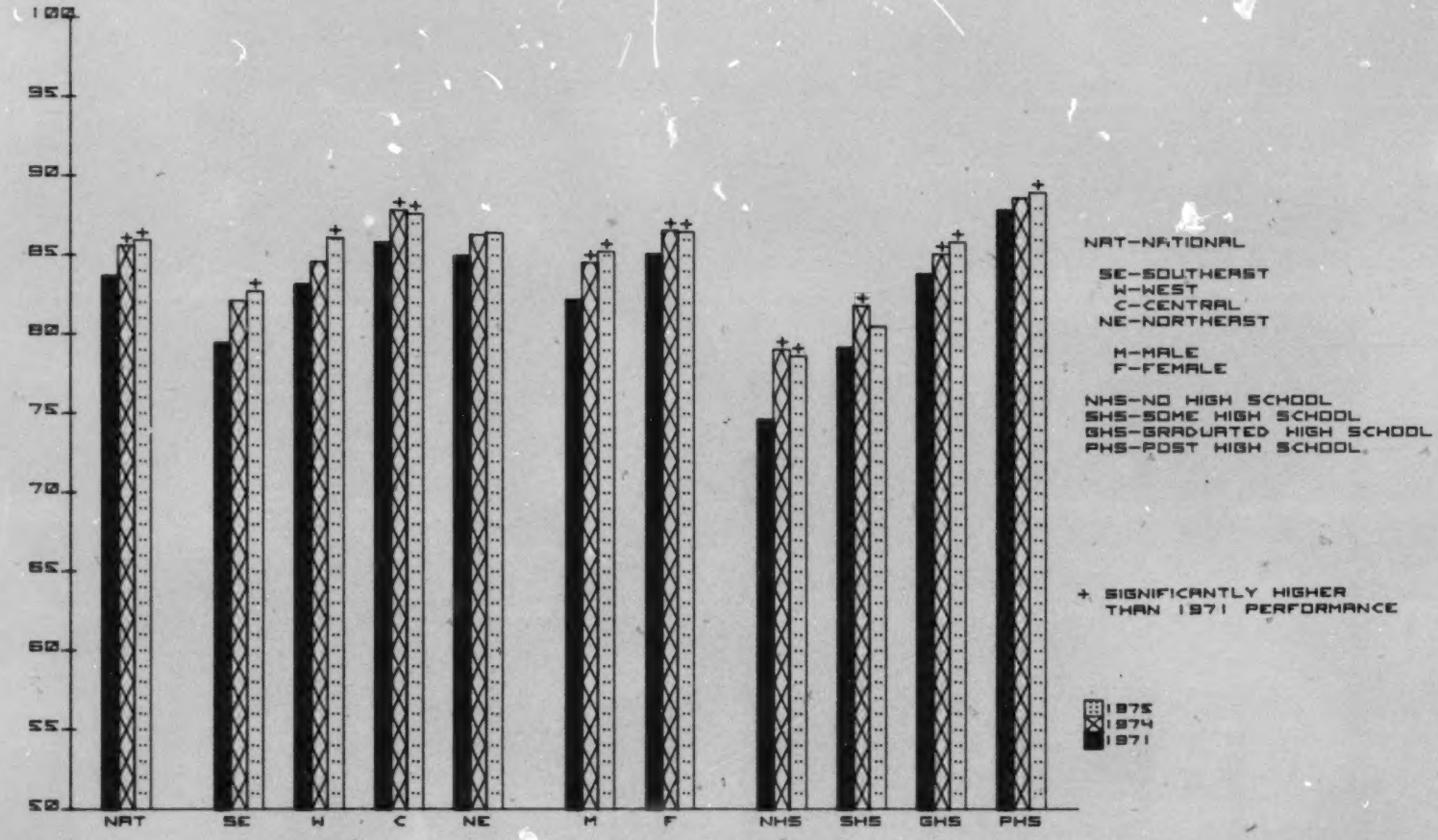
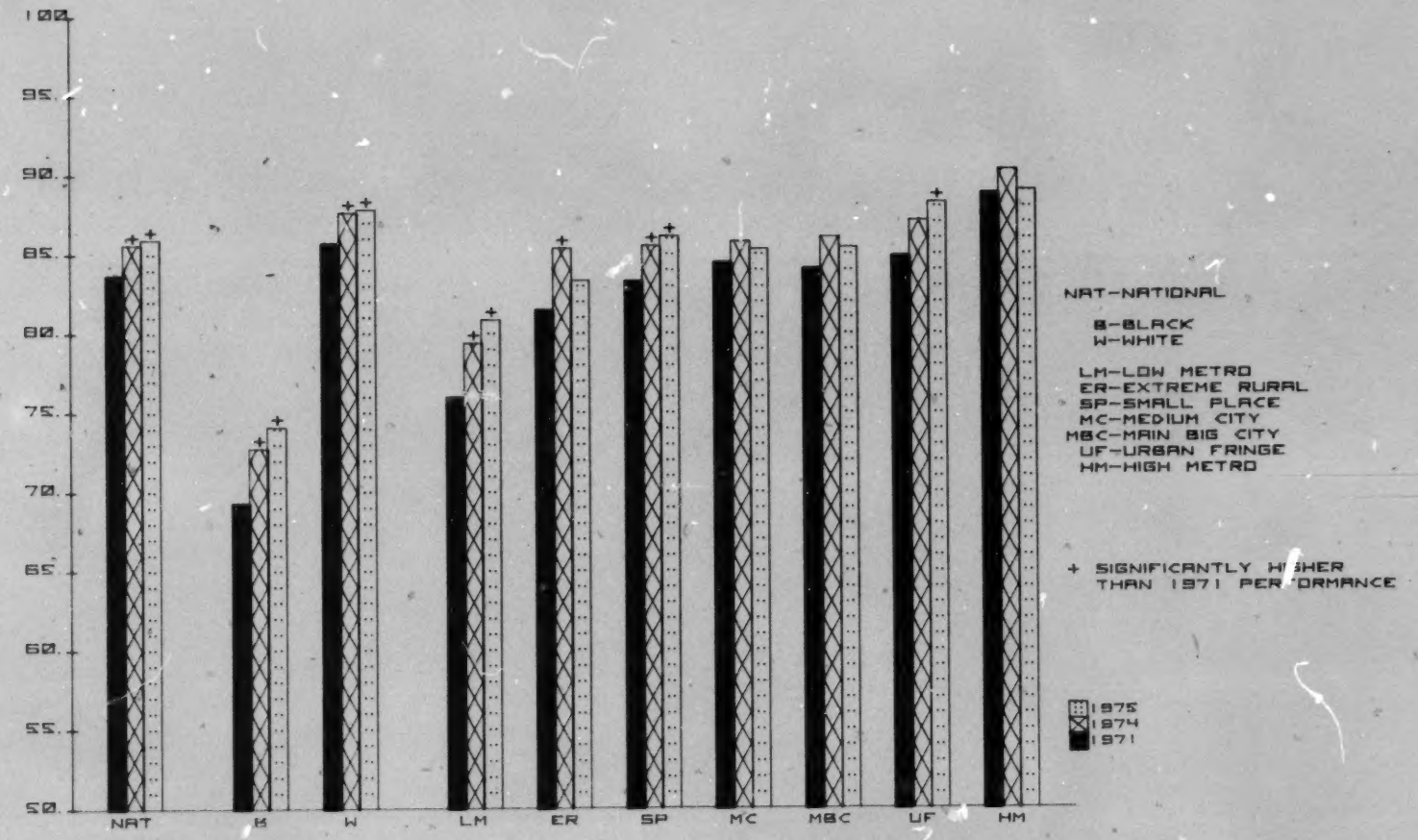


EXHIBIT 2-1 (cont.). Mean Percentages of Success -- Desired Performance Level
(Average of the Percentages of 17-Year-Old Students Answering
the Individual Exercises Correctly)



changes from 1971 to 1974, 1974 to 1975, and 1971 to 1975; the standard errors of the changes; and the probability that each change was due to random error. Each change for which this probability is no greater than 0.050 (significant) is indicated with an asterisk (*).

In two cases, the performance gap between those groups having the highest percentages of success and those having the lowest has diminished by a significant extent. Happily, both the performance-gap narrowings reported here represent more rapid improvements among the lower-performing group most in need of improving their functional-reading abilities.

- In the four-year period, 1971-1975, 17-year-old male students improved by 1.6 points more than the 17-year-old female students and more than halved the 1971 performance gap of 2.9 points.

- In the same four-year period, low-metro 17-year-old students improved by 4.7 points more than the high-metro 17-year-olds and narrowed their 1971 performance gap of 12.9 points by more than one-third.

The Complete MAFL

No group's performance on functional-reading skills changed significantly from 1974 to 1975 on the complete set of 86 MAFL exercises. Exhibit D-2 in Appendix D gives the mean percentages of success for each group for 1974 and 1975, the changes from 1975 to 1975, the standard errors of the changes, and the probability that each change was due to random error. For no change was the probability less than 0.050, i.e., significant.

The performance of some groups of 17-year-old students did improve or decline significantly on certain of the format or behavior classifications[4] of the exercises. For these groups, we report the significant percentage-point changes on these specific functional-reading achievements from 1974 to 1975 and the mean percentages of success in 1975.

- Passages (line-by-line narrative).

  National up 1.1 to 88.2.
  West up 2.2 to 88.5.
  Males up 1.2 to 87.1.

---

[4]The format and behavior classifications are defined briefly in Appendix C.

Whites up 0.7 to 89.7.
Graduated from high school up 1.2 to 88.1.
Post-high school up 1.0 to 90.6.

- Charts, maps, graphs.

  Low metro down 2.3 to 93.3.

- Forms.

  Females down 2.0 to 83.0.
  Post-high school down 1.2 to 8[illegible].0.
  Main big city down 5.6 to 80.6.

- Reference materials.

  Extreme rural down 7.1 to 77.6.

- Understand word meanings (in a context).

  National up 0.9 to 97.4.
  Southeast up 1.4 to 96.2.
  West up 2.3 to 97.9.
  Males up 0.9 to 96.9.
  Females up 0.9 to 98.0.
  Blacks up 2.2 to 94.0.
  Whites up 0.7 to 98.0.
  Graduated from high school up 0.9 to 97.5.
  Post-high school up 1.0 to 98.4.
  Small places up 1.1 to 97.4.
  High metro up 1.1 to 98.7.

- Glean significant facts.

  West up 1.5 to 88.3.

- Comprehend main ideas and organization.

  Some high school down 3.8 to 86.3.
  Extreme rural down 4.3 to 88.7.

- Draw inferences.

  High metro down 3.7 to 81.7.

- Read critically. Most groups declined on this skill and seven significantly so. There are, however, only three exercises in this category and nearly all the loss for every group is attributable to one exercise -- the "billboard" cited in Chapter 5.

CHAPTER 3

FUNCTIONAL-READING SKILLS RELATIVE TO THE HIGHEST EXPECTED LEVEL OF PERFORMANCE

While it might be desirable in our American society that all 17-year-old students be able to perform all the basic reading tasks required in the Mini-Assessment of Functional Literacy (MAFL), such a 100%-performance standard may not be the most realistic. Another, perhaps more suitable, standard against which to evaluate the functional reading skills of the various groups of 17-year-old students[1] might be the performance level achieved by a sample of 17-year-old students who are proven superior readers on the basis of having achieved above the 90th percentile on a nationally recognized standardized reading test.[2] To this end, all the MAFL exercises were administered to 100 such young people located in the Denver metropolitan area.[3] The performance level of these superior readers on each MAFL exercise was deemed to be the highest expected level of performance (HELP) for that exercise, that is, a level above which we would expect no other group to achieve. Each percentage of success was adjusted to the HELP standard by converting it to a percentage of the HELP for that exercise. For example, if 70% of a group answered a given exercise correctly and 90% of the superior readers answered the same exercise correctly, the group's percentages of success is adjusted to 77.8%, i.e., 70% divided by 90% and multiplied by 100.

The means reported in this chapter are the means of the adjusted percentages of success. Any difference between the mean adjusted percentages of success and 100% is a group's shortfall from the HELP standard.

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[1]All classifications of 17-year-old students are defined in Appendix A.

[2]The reading tests used in the high schools from which the superior readers were selected were: Nelson-Denny Reading Test; Stanford Achievement High School Battery; and California Test of Basic Skills, California Test Bureau.

[3]Since a good reader is a good reader, regardless what other traits he may possess, no classifications were applied to the superior readers. Likewise, since they are homogeneous on the trait of being able to read well, 100 was deemed to be an adequate, if not ideal, sample.

The Truncated MAFL[4]

We report each group's significant percentage-point changes[5] (relative to the HELP standard) in functional-reading achievement from 1971 to 1975 and its mean-adjusted percentage of success for 1975.

National.	Up 2.4 to 90.1.
Region.	Southeast up 3.5 to 86.6. West up 3.3 to 90.3. Central up 1.8 to 92.0. Northeast -- indeterminant, 90.7.
Sex.	Males up 3.3 to 89.6. Females up 1.4 to 90.5.
Race.	Blacks up 5.1 to 77.3. Whites up 2.3 to 92.2.
Parental education.	No high school up 4.2 to 82.2. Some high school -- indeterminant, 85.1. Graduated high school up 2.1 to 89.9.

---

[4]Of the 86 exercises that comprise the complete MAFL administered in 1974 and 1975, 64 had been used in National Assessment's 1971 fall reading assessment of 17-year-old students. This subset of exercises, called the truncated MAFL, provides data on the functional-reading skills of 17-year-old students at three points in time.

[5]Exact standard errors for the mean adjusted percentages of success and the changes have not been computed. A conservative estimate of the standard errors of the changes is that they are larger by 10% than the standard errors of the respective changes in the unadjusted mean percentages given in Chapter 2. All changes indicated as significant are based on these conservative estimates. All improvements mentioned by number in the text of this chapter have attained the 0.050 significance level (no greater than a 0.050 probability that the observed improvement was due to chance or random error). No observed declinations in functional reading attained this significance level.

	Post-high school up 1.2 to 93.5.
Size/type of community.	Low metro up 5.3 to 84.7. Extreme rural -- indeterminant, 87.2. Small places up 3.1 to 90.4. Medium city -- indeterminant, 89.5. Main big city, -- indeterminant, 89.6. Urban fringe up 3.5 to 92.6. High metro -- indeterminant, 93.3.

Exhibit 3-1 graphically shows the mean-adjusted percentages of success for each group for 1971, 1974 and 1975. A plus sign at the top of a group's 1974 and/or 1975 bar indicates that the mean percentage of success for that year represents a significant improvement over the group's 1971 level.

Exhibit D-3 in Appendix D shows in tabular form the mean-adjusted percentages of success for each group in 1971, 1975 and 1975 and the changes from 1971 to 1974, 1974 to 1975, and 1971 to 1975. Each change for which the probability is no greater than 0.050 (significant) is indicated by an asterisk (*).

The Complete MAFL

No group's performance on functional-reading skills changed significantly from 1974 to 1975 on the complete set of 86 MAFL exercises. Exhibit D-4 in Appendix D gives the mean-adjusted percentages of success for each group for 1974 and 1975, and the changes from 1974 to 1975. For no change was the probability less than 0.050, i.e., significant.

The performance of some groups of 17-year-old students did improve or decline significantly on certain of the format or behavior classifications[6] of the exercises. For these groups, we report the significant percentage-point changes on these specific functional-reading achievements from 1974 to 1975 and the mean percentages of success in 1975.

---

[6]The format and behavior classifications are defined briefly in Appendix C.

EXHIBIT 3-1. Mean Adjusted Percentages of Success -- Highest Expected Level of Performance (Average of the Percentages of 17-Year-Old Students Answering the Individual Exercises Correctly Adjusted to the Percentages of Superior Readers Answering the Individual Exercises Correctly)

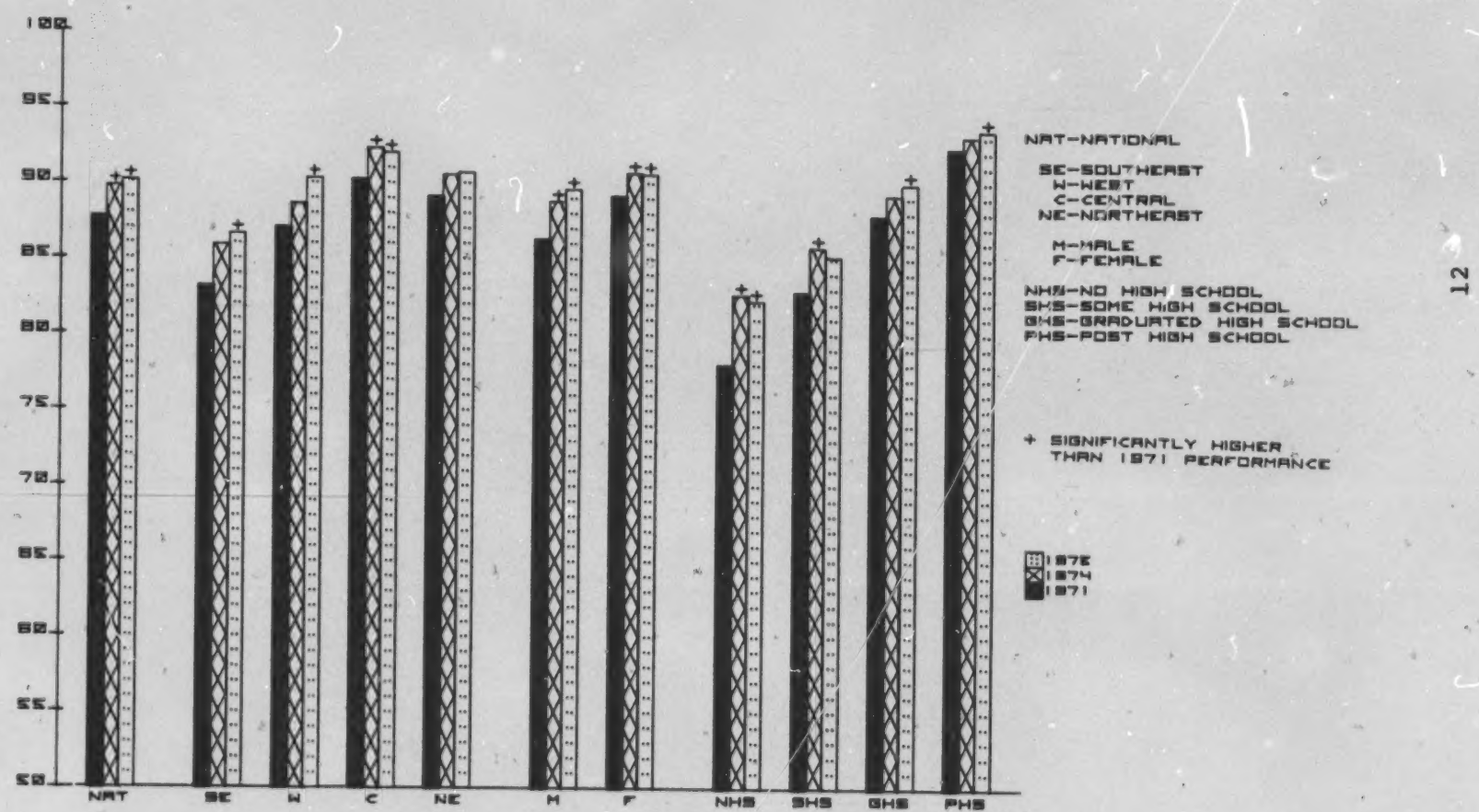
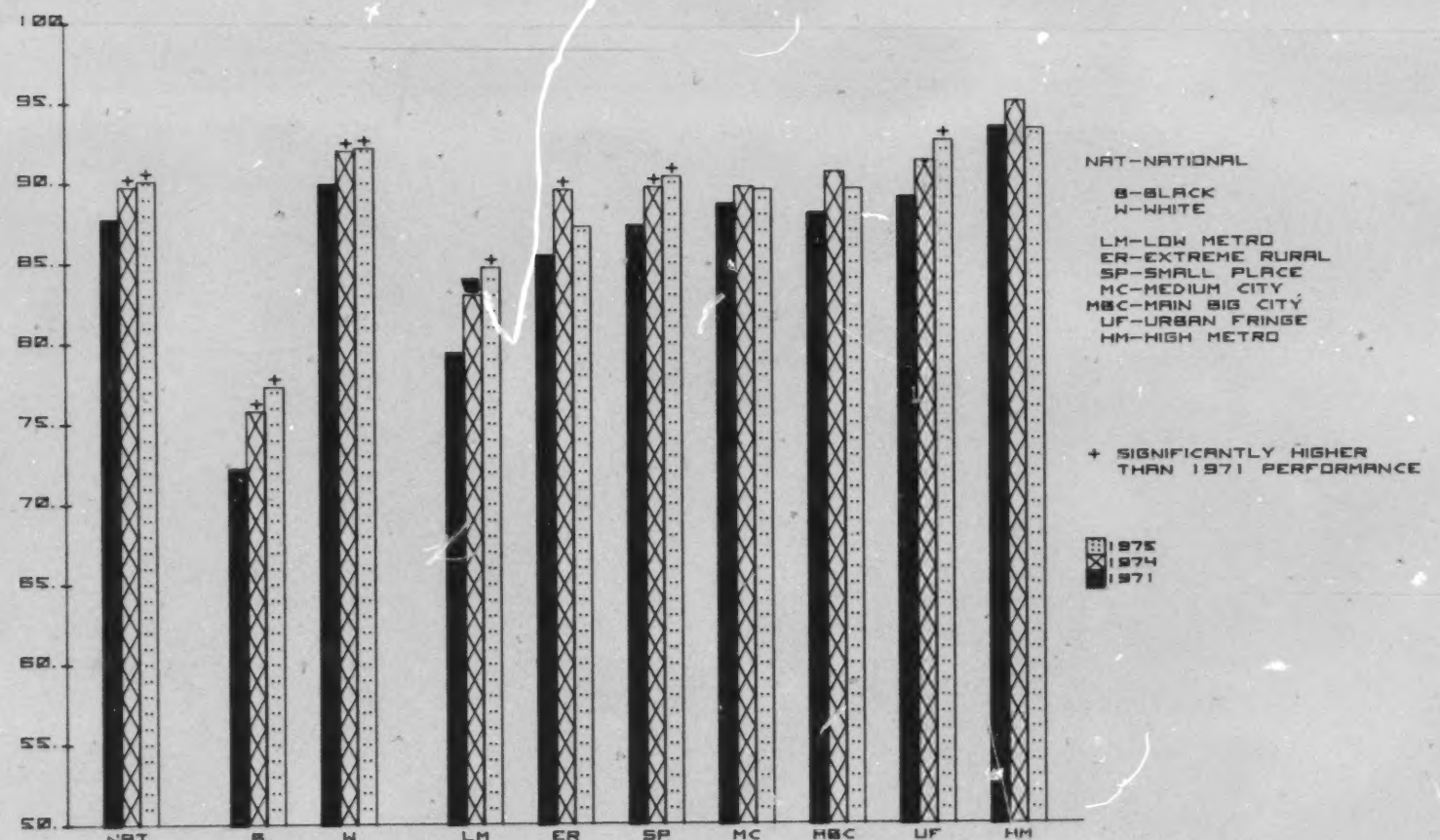


EXHIBIT 3-1 (cont.). Mean Adjusted Percentages of Success -- Highest Expected Level of Performance (Average of the Percentages of 17-Year-Old Students Answering the Individual Exercises Correctly Adjusted to the Percentages of Superior Readers Answering the Individual Exercises Correctly)



- Passages (line-by-line narrative).

  National up 1.1 to 92.5.
  West up 2.4 to 92.9.
  Males up 1.3 to 91.3.
  Graduated from high school up 1.3 to 92.3.
  Post-high school up 1.0 to 95.1.

- Charts, maps, graphs.

  High metro down 2.3 to 95.4.

- Forms.

  Females down 2.1 to 86.2.
  Main big city down 8.2 to 84.1.

- Reference materials.

  Extreme rural down 7.5 to 81.8.

- Understand word meanings (in context).

  National up 0.9 to 97.8.
  West up 2.3 to 98.2.
  Males up 0.9 to 97.2.
  Females up 0.9 to 98.3.
  Whites up 0.7 to 98.3.
  Graduated from high school up 0.9 to 97.8.
  Post-high school up 1.0 to 98.7.
  Small places up 1.1 to 97.7.

- Glean significant facts.

  West up 1.7 to 92.2

- Comprehend main ideas and organization.

  Blacks down 6.1 to 83.9.
  Some high school down 3.9 to 87.8.
  Extreme rural down 4.5 to 90.3.

- Draw inferences.

  High metro down 4.6 to 93.7.

- Read critically. Most groups declined on this skill and eight significantly so. There are, however, only three exercises in this category, and nearly all the loss for every group is attributable to one exercise -- the "billboard" cited in Chapter 5.

CHAPTER 4

FUNCTIONAL-READING SKILLS RELATIVE TO THE MINIMALLY ADEQUATE PERFORMANCE STANDARD

The National Right to Read Effort determined that 17-year-old students must be able to answer at least 75% of the exercises administered in the Mini-Assessment of Functional Literacy (MAFL)[1] in order for their functional-reading performance to be considered minimally adequate, and any students failing this criterion might reasonably be considered functionally illiterate. This, then, is the third standard against which we evaluate the functional-reading skills of 17-year-old students.

At the national level[2] in the 1975 MAFL, 87.4% of 17-year-old students attained the minimally adequate performance (MAP) standard.

Among the regions, the percentages of 17-year-old students attaining the MAP standard ranged from 90.9 in the Central region to 80.0 in the Southeast.

Among the 17-year-old female students, 89.1% attained the MAP standard while only 85.4% of the males did so.

Among white 17-year-old students, 91.8% attained the MAP standard of 91.8%, contrasted with 58.4% of the blacks who reached this level.

Among the 17-year-old students whose parents had various levels of education, 93.9% of those whose parents had post-high school training attained the MAP standard, while only 70.7% of those whose parents had no high school reached this level.

Within the size/type-of-community classifications of 17-year-old students, the percentages that attained the MAP standard ranged

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[1]Since any given student attempted only about half the MAFL exercises, the percentage of all 86 MAFL exercises he would have answered correctly had he attempted them was statistically estimated from the percentage of exercises he answered correctly of those he did attempt.

[2]All groups of 17-year-old students are defined briefly in Appendix A.

from 95.0 for the urban-fringe group to 78.5 for the low-metro group.

None of the percentages of 17-year-old students who attained the MAP standard in 1975 were significantly higher or lower than the percentages for the 1974 MAFL.

Exhibit D-5 in Appendix D shows the percentages of students who attained the MAP for both 1974 and 1975. Also shown are the percentages of 17-year-old students who correctly answered at least 60% and at least 90% of the MAFL exercises in 1974 and 1975.

CHAPTER 5

HIGHLIGHTS OF THE MINI-ASSESSMENT OF FUNCTIONAL LITERACY

Several of the exercises administered in the Mini-Assessment of Functional Literacy (MAFL) stand out from the others in that the performance on them by 17-year-old students departed markedly from the norm in one of three ways: (1) on three exercises, their performance was consistently low in all three assessment years -- 1971, 1974 and 1975; (2) on three exercises, their performance declined over the four-year period markedly more than one would anticipate on the basis of the changes in the mean percentages of success; and (3) on four exercises, their performance improved markedly more than one would expect on the basis of the changes in the mean percentages.

Low-Performance Exercises

When given a replica of an automobile insurance policy statement in 1971, 1974 and 1974, only 18.9, 17.5 and 18.1%, respectively, of the 17-year-old students were able to identify the correct amount of coverage for bodily injury liability. The 17-year-old males performed the highest of any group on this exercise; their percentages of success were 21.9, 23.1 and 25.1, respectively, for the three assessments. The correct answer required combining information in a column with information in the column heading -- a common billing practice.

Given a facsimile of a book-club membership application in the same three assessments, only 44.7, 43.7 and 43.3%, respectively, of the 17-year-old students recognized that no money was required to be sent in with the application. The application stated that applicants would be billed for a certain amount. Most of those who erred on this exercise said they would send in the amount to be billed.

Given a replica of a traffic ticket in 1971, 1974 and 1975, only 41.3, 46.6 and 49.0%, respectively, of the 17-year-old students could identify the date by which a fine for overtime parking must be paid. The ticket stipulated different allotted time periods for the payment of parking fines and fines for moving violations, but the final date for payment of a fine for moving violations was not among the available choices.

The percentages of 17-year-old students who correctly answered these three exercises in 1971, 1974 and 1975 are shown graphicallly in Exhibit 5-1. The percentages of each group of 17-year-old students are tabulated in Appendix D, Exhibit D-6.

Declining-Performance Exercises

When given a short (four-line) passage pertaining to Colorado mountains in 1971, 1974 and 1975, 74.6, 68.6 and 67.9%, respectively, of 17-year-old students were able to identify a sentence about Colorado gold as the one not belonging with the others. This represents a decline of 6.7 percentage points nationally. The performance of the main-big-city group had the sharpest decline of 16.7 points to 57.9 in 1975.

Given a replica of a report card in the three assessments, 80.4, 73.7 and 68.3%, respectively, of the 17-year-old students were able to identify the subject in which improvement was shown, a decline of 12.1 percentage points over four years. Black performance declined most sharply by 22.3 points. While the correct answer required using a coding key, this was consistent in all assessments.

Given a facsimile of a billboard sign, 76.5, 74.8 and 69.0%, respectively, of the 17-year-old students identified where they would probably see the sign, a four-year decline of 7.5 percentage points.

The percentages of 17-year-old students who correctly answered these three exercises are shown graphically in Exhibit 5-2. The percentages of each group of 17-year-old students -- showing the different rates of decline -- are tabulated in Appendix D, Exhibit D-7.

Improving-Performance Exercises

When given a facsimile of a help-wanted ad in 1971, 1974 and 1975, 77.0, 78.8 and 90.6%, respectively, of the 17-year-old students could identify how they should apply for the job -- an improvement of 13.6 percentage points. Blacks, the Southeast and the low-metro groups all improved by more than 20 points. From the same ad, 84.7, 79.8 and 94.7%, respectively, of the 17-year-old students knew the meaning of "Equal Opportunity Employer" -- a net improvement of 10.0 points despite an intermediate decline.

Given a facsimile of a coupon in the three assessments, 87.5, 93.8 and 94.1%, respectively, of the 17-year-old students were able to identify to whom the product (allegedly) appealed. From the same coupon, 71.4, 79.6 and 79.2%, respectively, of the 17-

EXHIBIT 5-1. National Percentages of Success for Three Exercises on Which 17-Year-Old Students Performed Consistently Low

A = Insurance Policy Statement -- Bodily Injury Liability
B = Book-Club Application -- Money to Send in
C = Traffic Ticket -- Date to Pay

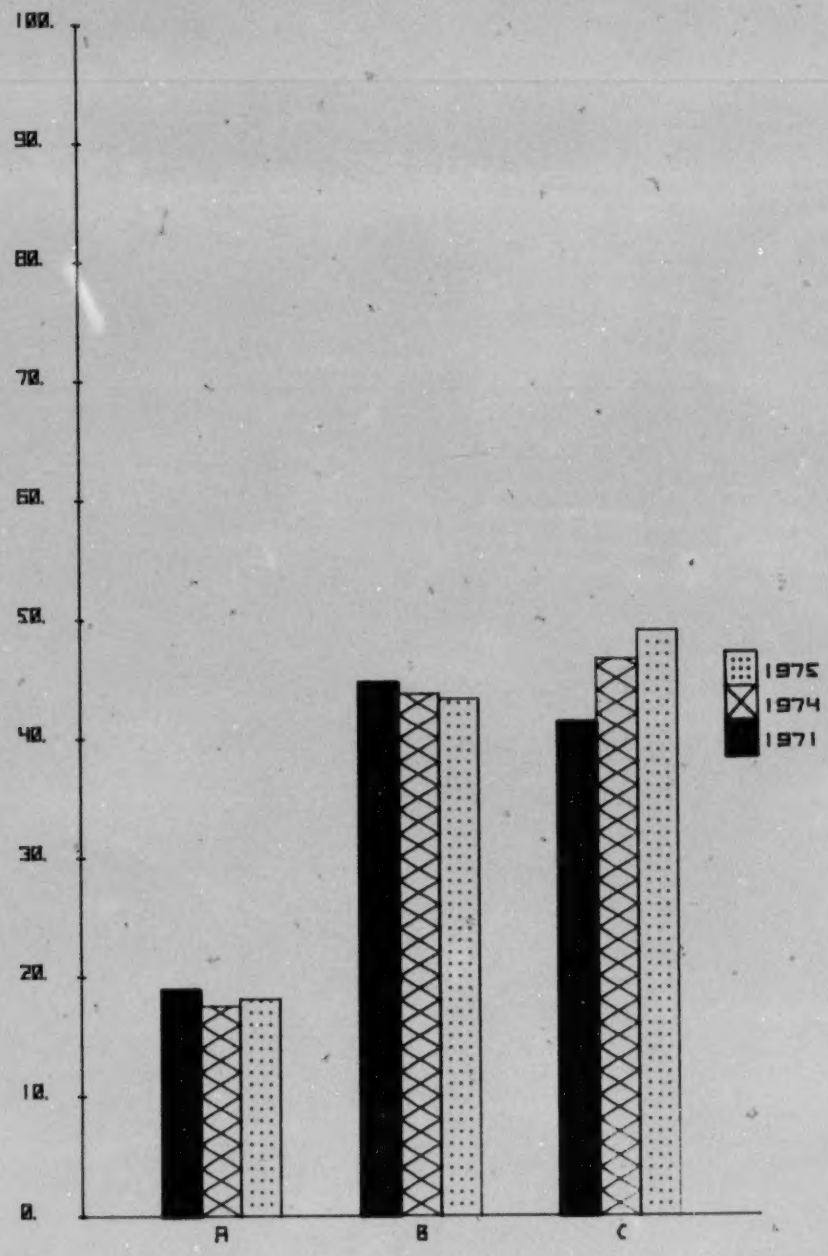
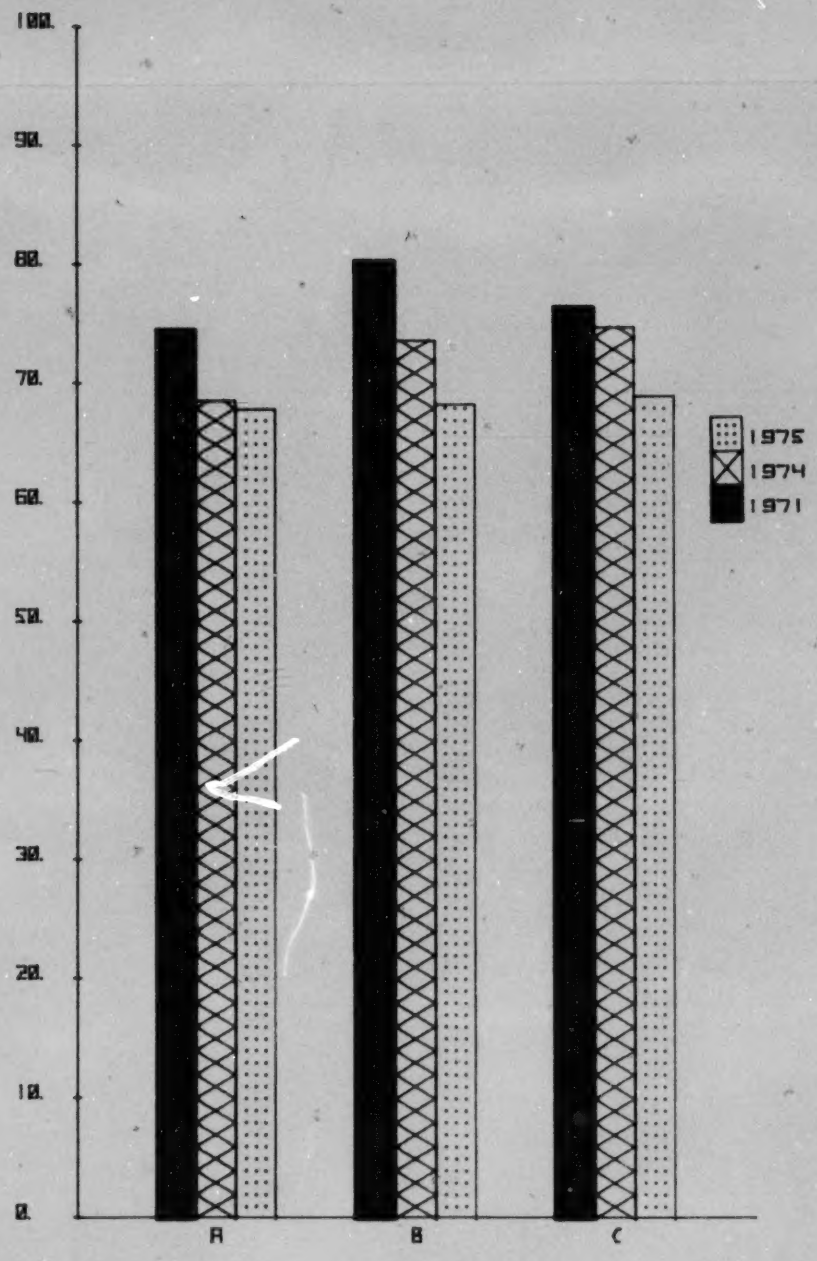


EXHIBIT 5-2. National Percentages of Success for Three Exercises on Which 17-Year-Old Students Declined Markedly

A = Passage -- Colorado Mountains
B = Report Card -- What Subject Improved
C = Billboard -- Where See



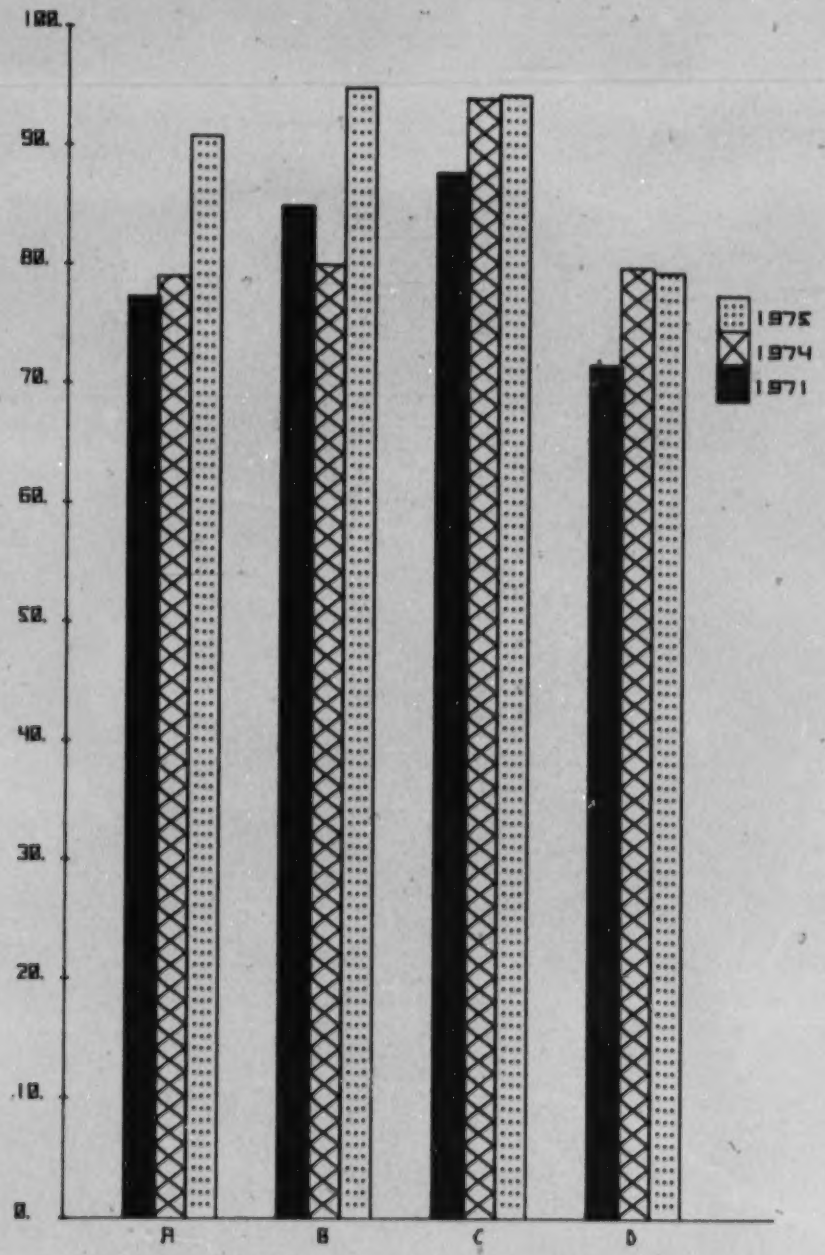
20

year-old students could identify the sizes of the product for which the coupon was redeemable.

The percentages of 17-year-old students who correctly answered these four exercises in 1971, 1974 and 1975 are shown graphically in Exhibit 5-3. The percentages of each group of 17-year-old students -- showing the different rates of improvement -- are tabulated in Appendix D, Exhibit D-8.

EXHIBIT 5-3. National Percentages of Success for Four Exercises on Which 17-Year-Old Students Improved Markedly

A = Help-Wanted Ad -- How to Apply
B = Help-Wanted Ad -- "Equal Opportunity Employer" meaning
C = Coupon -- Product Appeal
D = Coupon -- Sizes Good For



APPENDIX A

DEFINITIONS OF GROUPS FOR WHOM RESULTS ARE REPORTED FOR THE MINI-ASSESSMENT OF FUNCTIONAL LITERACY

For the Mini-Assessment of Functional Literacy (MAFL), the National Assessment of Educational Progress (NAEP) reports results for only those 17-year-olds enrolled in school at the time the relevant assessment was conducted. The 17-year-olds in the MAFL are defined as:

1. 1971 Assessment -- All those attending public or private schools during March and April 1971, and born between October 1, 1953, and September 30, 1954.

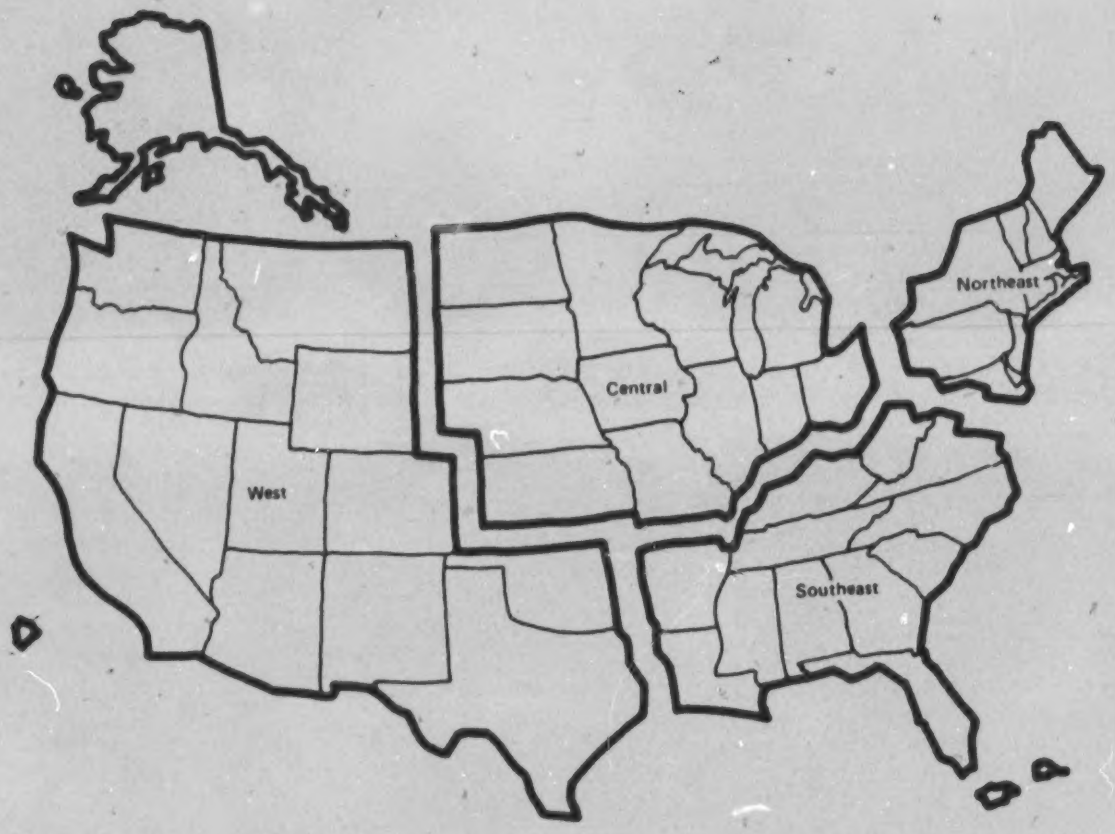
2. 1974 Assessment -- All those attending public or private schools during March and April 1974, and born between October 1, 1956, and September 30, 1957.

3. 1975 Assessment -- All those attending public or private schools during March and April 1975, and born between October 1, 1957, and September 30, 1958.

Excluded from these assessments were students who were non-English speaking; institutionalized; or physically, emotionally or mentally handicapped in such a way that they could not respond to the exercises as administered.

National Assessment also reports MAFL results for the following categories of 17-year-old students:

- Sex: males and females
- Race: black and white
- Parental education consisting of the subcategories: no high school for either parent; some high school for at least one parent, but neither parent had graduated; at least one parent who graduated from high school, but neither with more formal education; at least one parent with some formal education beyond high school.
- Geographic region: Southeast, West, Central and Northeast.



- Size and type of community consisting of the subcategories:

  Low metro -- students attending schools within large urban areas (greater than 200,000 population) where high percentages of the parents are not regularly employed or are on welfare.

  High metro -- students attending schools within large urban areas where high percentages of the parents are in professional and managerial occupations.

  Extreme rural -- students attending schools within rural areas and small towns (most or all students from places under 2,500 and none from places over 10,000 population) where high percentages of the parents are farm workers.

  Main big city -- students attending a school within a city having a population of at least 200,000 that was not classified as low metro or high metro.

Urban fringe -- students attending any school outside the city limits of a big city (greater than 200,000 population) but within the urbanized area of such a city or cities and not classified as low metro or high metro.

Medium city -- students attending a school in a city having a population of at least 25,000 and less than 200,000 and not in the urbanized area of a big city.

Small places -- students attending a school in the open country or in a community having a population less than 25,000 and not in the urbanized area of a big city and not classified as extreme rural.

NOTE: More complete and technically precise definitions of these groups are given in the MAFL Statistical/Documentary Report: Summary Volume, Appendix A.

APPENDIX B

DESCRIPTIONS OF THE EXERCISES USED IN THE MINI-ASSESSMENT OF FUNCTIONAL LITERACY

Because the exercises used in the Mini-Assessment of Functional Literacy are not released for public use, we cannot reproduce them here. Instead, we present a brief description of each exercise and the question(s) asked about it.

- List of words beginning with "FL...."

  Which of these words comes first in a dictionary?

- Picture of four doors that might be in a school, labeled "Principal," "Nurse," "Cafeteria," "Library."

  Door where you might go for lunch?

- Replica of automobile insurance policy statement.

  A. What is the maximum amount for which this policy covers medical bills?

  B. What is the maximum amount this policy would pay in case you injured another person in an automobile accident?

- List of five pairs of last names beginning with "J...."

  You want to call Mr. Jones on the telephone. You would find his number between which names?

- Facsimile of detail from a road map.

  A. By car, is Northtown closer to Rice Lake than to Hope?

  B. Can you drive all the way from Northtown to Falls City on Highway 71?

C. Is Hope the town closest to Centerville?

D. Is Centerville farther west than Hope?

E. Does Highway 20 run on the south side of Rice River?

- Facsimile of a check.

  A. Who is to receive the money?

  B. What is the number of the check?

  C. For what reason would a bank probably NOT cash the check?

- Identify meaning of a nonsense word as used in a passage.

- Passage describing scarlet fever.

  Identify information given in the first sentence.

- Facsimile of a book-club membership application.

  A. What shipping costs if you live in Canada?

  B. What money should you send with the order for books?

  C. How many additional books must you buy?

- Picture of door with sign hanging <u>on</u> it.

  Identify this fact as opposed to the sign's hanging by, over or near the door.

- Identify which of four sentences does not belong with the other three.

- Replica of report card.

  Identify the reporting period covered.

- Replica of "Help Wanted" advertisement.

A. Identify starting and quitting times.

B. Identify minimum age.

C. Identify salary.

- Picture of mushroom with parts named.

  Identify the parts named.

- Replica of map taken from telephone directory showing service areas with prefixes and listing of which areas require toll charges.

  A. Seven service areas are given. Identify which ones require a toll charge and which do not.

  B. If you placed a call to 533-0221, what area would you be calling?

- Identify sentence that tells the meaning of "I certainly won't miss that movie.

- Replica of long distance telephone bill.

  A. Where was call made on February 14 from?

  B. Where was call made on February 14 to?

  C. What did call made on February 14 cost?

- Identify the word that best describes the tone of a sentence.

- Facsimile of excerpt from 1040 income tax form instructions.

  Identify maximum standard deduction for married people filing separately.

- Replica of ad for preventing forest fires.

  A. What is the name of the bear pictured?

  B. What is the purpose of the ad?

C. What specific instruction does ad give to help prevent forest fires?

- Replica of "Help Wanted" advertisement.

  A. What company is offering the job?

  B. What kind of job is being offered?

  C. What are two qualifications for the job?

  D. What is the top salary after six weeks of training?

  E. How should you apply for job if you live locally?

  F. What do words "Equal Opportunity Employer" mean?

- Picture of four doors that might be in a school, labeled "Principal," "Nurse," "Cafeteria," "Library."

  Door where you would send a visitor who wants to see the person in charge of the school.

- Recognize that a short passage tells how a man looks.

- Replica of report card.

  Identify subject area in which the student is improving his work.

- Listing of comparable sizes for women's clothing in U.S.A., England and Europe.

  A. Size of shoes a woman would ask for in Europe if she wears an 8 in U.S.A.

  B. If she wears a 38 sweater in the U.S.A., what size would she buy in Europe?

  C. If her wardrobe contains the following sizes: 34 blouse, 12 dress, 8 shoes, what sizes would she buy in Europe?

- Passage describing magic trick.

A. Identify first thing to do to perform the trick.

B. What do you do while standing in a dimly-lit corner of the room?

- Picture of spines of a set of encyclopedias.

  Give number of volume where you would find out about George Washington.

- Passage giving reasons for preferring dog over cat.

  Identify the number of reasons given.

- Replica of traffic ticket.

  A. Must a person appear at the Traffic Violation Bureau to plead "Not Guilty" to a violation?

  B. What would fine be for parking two hours in a one-hour zone?

  C. If a person found this ticket on his car Thursday, June 4, he would have until what date to pay his fine?

- Sentence distinguishing use of "ever" and "never."

- Facsimile of billboard.

  Identify where you would see this sign.

- Passage describing a man's trip to Mt. Everest.

  Identify reason man went to Mt. Everest.

- Listing of telephone area codes and long distance information.

  A. Identify number to call to obtain number in New York City.

  B. Identify number to call in Syracuse, N.Y.

- Facsimile of label from bug spray can giving directions for use and list of bugs it kills.

  A. Identify which bug probably would not be killed by spray.

  B. How far from surface should you hold the can?

- Facsimile of store coupon.

  A. Identify "audience" the product will appeal to.

  B. Identify size(s) of product.

  C. Recognize terminal date for coupon use.

  D. Identify amount dealer will be paid for coupon.

- Replica of page from telephone directory giving information about long distance calls.

  A. Recognize which rate would apply to a station-to-station call made at 5:00 p.m. on a non-holiday Saturday.

  B. Recognize how a station-to-station call differs from a person-to-person call.

- Quotation from person commenting on TV programs.

  Identify the type of program the speaker prefers.

- Facsimile of four common traffic signs.

  Identify which sign (for pedestrians) tells you what to do if you are walking.

- List of five pairs of guide words from dictionary that begin with letter "O...."

  Identify the pair between which you would find the word "optimal."

- Facsimile of four common traffic signs.

  Identify sign to look for if you want to catch a bus.

- Facsimile of portion of 1040 income tax form instructions.

  A. Identify the marital status for tax purposes of a couple divorced during the tax year.

  B. Identify whether couple could file a joint return the following year.

  C. Identify whether they could have filed a joint return for the year in which they were married.

- Passage.

  Identify set of words that tells what the passage was mainly about.

- Facsimile of contents listings from labels of two brands of dog food.

  Identify brand that contains more protein.

APPENDIX C

CLASSIFICATION OF THE EXERCISES USED IN THE MINI-ASSESSMENT OF FUNCTIONAL LITERACY

The types of formats of reading materials presented to the 17-year-old students in the Mini-Assessment of Functional Literacy (MAFL) were:

- Passages: line-by-line narrative such as found in stories, poems or newspaper and magazine articles.

- Graphic materials:

  A. Drawings or simple pictures, various signs including signs on doors and traffic signs, and a replica of a store coupon.

  B. Charts, maps and graphs. The materials of this format could, in one sense, be considered reference materials, since a person consults these materials in search of specific information.

  C. Forms -- an insurance policy statement, a check, a report card and a long distance telephone bill. Forms tend to be organized in a specific way to enhance the location of the materials they contain -- also a feature of reference materials.

- Reference materials: includes facsimiles of dictionaries, encyclopedias and telephone directories. These materials are organized to facilitate the location of specific information that a person is usually in search of when he consults a reference work.

The reading behaviors (or skills) for which the 17-year-old students were assessed in the MAFL were:

- Understand word meanings: After the reader produces the sound (vocally or subvocally) that makes up the word, can he understand it?

- Glean significant facts: Can the reader locate or identify specific facts contained in the different kinds of reading materials?

- Comprehend main ideas and organization: Can the reader identify the main idea or topic and understand how the writer organized facts to support it?

- Draw inferences: Can the reader go beyond the information given by the writer and draw conclusions based on that information?

- Read critically: Can the reader use his own thoughts and experiences to analyze; criticize; evaluate; and then accept, modify or reject what the writer has said?

Labels attached to categories of reading tasks can be misleading by implying greater difficulty than the actual tasks display. The functional-literacy reading tasks required only a basic reading skill in all categories. For example, while comprehending main ideas and organization generally implies a higher-order reading skill, the exercises included in this category represent a very low level of this skill. Four of the eight exercises merely required knowledge of the alphabetical organization of dictionaries, telephone books and encyclopedias; two asked for the main idea of very short passages (two and four lines); one asked which of four sentences did not belong with the others; and one asked with which fact a passage begins.

NOTE: More complete definitions of these categories are given in the MAFL Statistical/Documentary Report: Summary Volume, Appendix C.

APPENDIX D

TABLES OF DATA DISCUSSED IN PRECEDING CHAPTERS

The tables in this appendix are for the benefit of those who might wish to examine a more complete presentation of the data than given in the preceding chapters. Each tabular exhibit is preceded by an explanation of the data the exhibit contains.

Exhibit D-1

The Mean Percentages of Success of the 17-Year-Old Students on the TRUNCATED MAFL -- Desired-Performance-Level Standard

Exhibit D-1 shows, for each group of 17-year-old students, the mean percentages of success on the truncated MAFL for 1971, 1974 and 1975 (Mean Percentages); the changes from 1971 to 1974, 1974 to 1975, and 1971 to 1975 (Chng.); the standard errors of the changes (SECH.); and the probability that each change is due to random error (Prob.). Those changes for which the probability is no greater than 0.050, i.e., statistically significant, are indicated by an asterisk (*). The difference between 100% and any given group's mean percentage of success shown in Exhibit D-1 is that group's shortfall from the desired-performance-level standard of functional literacy relative to the truncated MAFL.

EXHIBIT D-1. The Mean Percentages of Success (Desired Performance Standard) on the TRUNCATED MAFL in 1971, 1974 and 1975; the Changes From 1971 to 1974, 1974 to 1975, and 1971 to 1975; Standard Errors of the Changes; and the Probabilities That the Changes Are Due to Random Error

Variable Group	Mean Percentages			1971-1974			1974-1975			1971-1975		
	1971	1974	1975	Chng.	SECH.	Prob.	Chng.	SECH.	Prob.	Chng.	SECH.	Prob.
National	83.7	85.6	85.9	+1.9*	0.5	<0.001	+0.3	0.5	0.490	+2.2*	0.5	<0.001
Region												
Southeast	79.4	82.1	82.7	+2.7	1.7	0.116	+0.6	1.6	0.704	+3.3*	1.2	0.005
West	83.1	84.5	86.1	+1.4	1.0	0.142	+1.5	0.8	0.056	+2.9*	0.9	0.001
Central	85.8	87.8	87.6	+2.0*	0.7	0.005	-0.2	0.7	0.757	+1.8*	0.8	0.020
Northeast	85.0	86.3	86.4	+1.3	0.9	0.139	+0.1	1.0	0.904	+1.4	1.0	0.159
Sex												
Male	82.2	84.5	85.2	+2.3*	0.6	<0.001	+0.7	0.6	0.267	+3.0*	0.6	<0.001
Female	85.1	86.6	86.5	+1.5*	0.6	0.009	-0.1	0.5	0.881	+1.4*	0.6	0.010
Race												
Black	69.3	72.8	74.1	+3.5*	1.6	0.026	+1.3	2.0	0.497	+4.8*	1.9	0.010
White	85.7	87.6	87.8	+1.9*	0.3	<0.001	+0.2	0.4	0.653	+2.1*	0.4	<0.001
Parental education												
No high school	74.6	79.0	78.6	+4.4*	1.8	0.011	-0.4	1.2	0.818	+4.0*	1.5	0.006
Some high school	79.1	81.8	80.5	+2.7*	1.1	0.018	-1.3	1.3	0.327	+1.4	1.1	0.222
Graduated high school	83.8	85.1	85.8	+1.3*	0.6	0.049	+0.8	0.6	0.219	+2.0*	0.6	0.001
Post-high school	87.8	88.6	89.0	+0.8	0.4	0.077	+0.3	0.4	0.418	+1.1*	0.4	0.011
Size/type of community												
Low metro	76.0	79.4	80.8	+3.4*	1.7	0.048	+1.5	1.8	0.401	4.9*	1.9	0.009
Extreme rural	81.5	85.3	83.3	+3.9*	1.8	0.036	-2.0	1.9	0.285	+1.8	1.6	0.263
Small place	83.2	85.5	86.1	+2.3*	0.9	0.010	+0.6	0.8	0.487	+2.9*	0.8	<0.001
Medium city	84.4	85.7	85.3	+1.3	1.2	0.258	-0.4	1.3	0.711	+0.9	1.2	0.484
Main big city	84.0	86.0	85.4	+2.0	1.8	0.271	-0.6	2.2	0.764	+1.3	1.9	0.490
Urban fringe	84.8	87.1	88.2	+2.3	1.2	0.070	+1.1	1.2	0.322	+3.4*	1.1	0.002
High metro	88.8	90.3	89.0	+1.5	1.1	0.180	-1.3	1.4	0.347	+0.2	1.2	0.857

*Significant: The probability is no greater than 0.050 that the change is due to random error.

Exhibit D-2

The Mean Percentages of Success of the 17-Year-Old Students on the COMPLETE MAFL -- Desired-Performance-Level Standard

Exhibit D-2 shows, for each group of 17-year-old students, the mean percentages of success on the complete MAFL for 1974 and 1975 (Mean Percentages), the changes from 1974 to 1975 (Chng.), the standard errors of the changes (SECH.), and the probability that each change is due to random error (Prob.). Since all these changes have probabilities greater than 0.050, none can be considered statistically significant. The difference between 100% and any given group's mean percentage of success shown in Exhibit D-2 is that group's shortfall from the desired-performance level of functional literacy relative to the complete MAFL.

EXHIBIT D-2. The Mean Percentages of Success (Desired Performance Standard) on the COMPLETE MAFL in 1974 and 1975, the Changes From 1974 to 1975, Standard Errors of the Changes, and the Probabilities That the Changes Are Due to Random Error

Variable Group	Mean Percentages 1974	1974	1974-1975 Chng.	SECH.	Prob.
National	87.5	87.6	+0.2	0.4	0.697
Region					
Southeast	84.7	84.8	+0.1	1.2	0.920
West	86.7	87.8	+1.1	0.7	0.112
Central	89.4	89.2	-0.2	0.6	0.711
Northeast	87.9	88.1	+0.2	0.9	0.865
Sex					
Male	86.5	86.9	+0.4	0.5	0.509
Female	88.4	88.3	-0.1	0.4	0.857
Race					
Black	76.3	76.9	+0.5	1.6	0.741
White	89.3	89.4	+0.0	0.4	0.928
Parental education					
No high school	82.1	81.3	-0.8	1.4	0.567
Some high school	84.5	83.1	-1.4	1.1	0.211
Graduated high school	87.0	87.5	+0.5	0.5	0.317
Post-high school	90.1	90.3	+0.2	0.4	0.555
Size/type of community					
Low metro	81.9	83.0	+1.1	1.5	0.465
Extreme rural	87.5	85.3	-2.2	1.5	0.142
Small places	87.4	87.8	+0.4	0.7	0.610
Medium city	87.7	87.2	-0.5	1.0	0.617
Main big city	87.9	87.1	-0.8	1.8	0.308
Urban fringe	88.7	89.9	+1.2	1.0	0.238
High metro	91.8	90.4	-1.4	1.1	0.194

Exhibit D-3

The Mean ADJUSTED Percentages of Success of the 17-Year-Old Students on the TRUNCATED MAFL -- Highest Expected Level of Performance Standard

Exhibit D-3 shows, for each group of 17-year-old students, the mean superior-reader-adjusted percentages of success for the truncated MAFL for 1971, 1974 and 1975 (Mean Percentages) and the changes from 1971 to 1974, 1974 to 1975, and 1971 to 1975 (Change).[1] Those changes for which the probability is no greater than 0.050, i.e., statistically significant, are indicated by an asterisk (*). The difference between 100% and any given group's mean percentage of success shown in Exhibit D-3 is that group's shortfall from the highest expected level of performance standard of functional literacy relative to the truncated MAFL.

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[1]Exact standard errors for the mean adjusted percentages of success and the changes have not been computed. A conservative estimate of the standard errors of the changes is that they are larger by 10% than the standard errors of the respective changes in mean percentages shown in Exhibit D-1. The indicated significant changes are based on these conservatively estimated standard errors.

EXHIBIT D-3. The Mean ADJUSTED Percentages of Success (Highest Expected Level of Performance) on the TRUNCATED MAFL in 1971, 1974 and 1975; and the Changes From 1971 to 1974, 1974 to 1975 and 1971 to 1975

Variable Group	Mean Percentages			Change		
	1971	1974	1975	71-74	74-75	71-75
National	87.7	89.7	90.1	+2.0*	+0.4	+2.4*
Region						
Southeast	83.1	85.9	86.6	+2.7	+0.7	+3.5*
West	87.0	88.6	90.3	+1.6	+1.7	+3.3*
Central	90.2	92.3	92.0	+2.1*	-0.3	+1.8*
Northeast	89.1	90.5	90.7	+1.4	+0.2	+1.6
Sex						
Male	86.3	88.8	89.6	+2.5*	+0.8	+3.3*
Female	89.1	90.6	90.5	+1.5*	-0.1	+1.4*
Race						
Black	72.2	75.8	77.3	+3.6*	+1.5	+5.1*
White	89.9	92.0	92.2	+2.1*	+0.2	+2.3*
Parental education						
No high school	78.0	82.6	82.2	+4.6*	-0.4	+4.2*
Some high school	82.8	85.7	85.1	+2.9*	-0.6	+2.3
Graduated high school	87.8	89.2	89.9	+1.3	+0.7	+2.1*
Post-high school	92.3	93.1	93.5	+0.8	+0.4	+1.2*
Size/type of community						
Low metro	79.4	83.0	84.7	+3.6*	+1.7	+5.3*
Extreme rural	85.4	89.5	87.2	+4.1*	-2.3	+1.8
Small places	87.3	89.7	90.4	+2.4*	+0.7	+3.1*
Medium city	88.6	89.7	89.5	+1.1	-0.2	+0.9
Main big city	88.0	90.6	89.6	+2.6	-1.0	+1.5
Urban fringe	89.0	91.3	92.6	+2.3	+1.3	+3.5*
High metro	93.4	95.0	93.3	+1.6	-1.7	-0.1

*Significant: The probability is no greater than 0.050 that the change is due to random error.

Exhibit D-4

The Mean ADJUSTED Percentages of Success of the 17-Year-Old Students on the COMPLETE MAFL -- Highest Expected Level of Performance Standard

Exhibit D-4 shows, for each group of 17-year-old students, the mean superior-reader-adjusted percentages of success for the complete MAFL for 1974 and 1975 (Mean Percentages), and the changes from 1974 to 1975 (Chng.).[2] Since all these changes have probabilities greater than 0.050, none can be considered statistically significant. The difference between 100% and any given group's mean percentage of success shown in Exhibit D-4 is that group's shortfall from the highest expected level of performance standard relative to the complete MAFL.

[2]Exact standard errors for the mean adjusted percentages of success and the changes have not been computed. A conservative estimate of the standard errors of the changes is that they are larger by 10% than the standard errors of the respective changes in mean percentages shown in Exhibit D-2.

EXHIBIT D-4. The Mean ADJUSTED Percentages of Success (Highest Expected Level of Performance) on the COMPLETE MAFL in 1974 and 1975 and the Changes From 1974 to 1975

Variable Group	Mean Percentages 1974	1975	Chng. 74-75
National	91.2	91.4	+0.2
Region			
Southeast	88.1	88.3	+0.2
West	90.3	91.6	+1.2
Central	93.3	93.0	-0.3
Northeast	91.6	91.8	+0.2
Sex			
Male	90.2	90.6	+0.4
Female	92.0	91.9	-0.1
Race			
Black	79.1	79.7	+0.6
White	93.2	93.2	+0.0
Parental education			
No high school	85.4	84.5	-0.9
Some high school	87.9	86.3	-1.6
Graduated high school	90.7	91.2	+0.5
Post-high school	94.0	94.3	+0.3
Size/type of community			
Low metro	85.2	86.4	+1.3
Extreme rural	91.2	88.8	-2.4
Small places	91.1	91.5	+0.4
Medium city	91.2	90.9	-0.3
Main big city	91.9	90.8	-1.1
Urban fringe	92.4	93.7	+1.3
High metro	95.9	94.1	-1.8

Exhibit D-5

Percentages of 17-Year-Old Students in Each Group Who Correctly Answered AT LEAST 90, 75 and 60% of the MAFL Exercises Correctly. Seventy-Five Percent Is the Minimally Adequate Performance Standard

Exhibit D-5 shows, for each group of 17-year-old students, the percentage who correctly answered at least 90%, 75% and 60% of the MAFL exercises in 1974 and 1975 (Percentage); the changes from 1974 to 1975 (Chng.); the standard errors of the changes (SECH.); and the probability that each change is due to random error (Prob.). Those changes for which the probability is no greater than 0.050, i.e., statistically significant, are indicated by an asterisk (*). The difference between 100% and the percentage of 17-year-old students in any given group that correctly answered at least 75% of the MAFL exercises is the group's shortfall from the minimally adequate performance standard.

EXHIBIT D-5. Percentages of 17-Year-Old Students Who Answered at Least 90%, 75% (Minimally Acceptable Performance Standard) and 60% of the MAFL Exercises in 1974 and 1975; the Changes From 1974 to 1975; Standard Errors of the Changes; and Probabilities That the Changes Are Due to Random Error

Variable Group	90% of MAFL Exercises					75% of MAFL Exercises					60% of MAFL Exercises				
	Percentage		1974-1975			Percentage		1974-1975			Percentage		1974-1975		
	1974	1975	Chng.	SECH.	Prob.	1974	1975	Chang.	SECH.	Prob.	1974	1975	Chng.	SECH.	Prob.
National	55.6	55.6	0.0	1.8	1.000	86.8	87.4	+0.6	1.1	0.596	97.0	97.1	+0.1	0.5	0.841
Region															
Southeast	46.0	47.7	+1.7	3.7	0.653	79.3	80.0	+0.7	3.6	0.841	94.2	93.3	-0.9	1.5	0.562
West	55.6	54.2	-1.4	3.0	0.638	86.7	88.0	+1.3	2.0	0.516	95.8	97.8	+2.0	1.1	0.080
Central	60.9	61.5	+0.6	2.8	0.834	91.2	90.9	-0.3	1.6	0.849	99.2	98.8	-0.4	0.6	0.509
Northeast	56.0	56.5	+0.5	4.3	0.904	86.9	89.0	+2.1	2.2	0.337	98.1	97.5	-0.6	0.8	0.478
Sex															
Male	51.6	52.9	+1.3	2.2	0.549	84.7	85.4	+0.7	1.4	0.624	96.5	96.1	-0.4	0.7	0.589
Female	59.3	58.0	-1.3	2.2	0.549	88.7	89.1	+0.4	1.4	0.772	97.5	97.9	+0.4	0.5	0.441
Race															
Black	21.1	17.3	-3.8	3.4	0.258	55.6	58.4	+2.8	5.0	0.575	86.6	85.3	-1.3	2.9	0.653
White	61.1	61.6	+0.5	1.8	0.787	91.7	91.8	+0.1	0.9	0.912	98.6	98.8	+0.2	0.4	0.569
Parental education															
No high school	33.7	31.2	-2.5	4.8	0.603	77.7	70.7	-7.0	4.6	0.124	92.9	94.6	+1.7	1.9	0.379
Some high school	40.9	38.5	-2.4	4.1	0.555	79.1	76.6	-2.5	3.6	0.484	96.2	93.7	-2.5	2.0	0.215
Graduated high school	55.5	53.2	-2.3	2.2	0.298	85.7	87.5	+1.8	1.5	0.234	96.3	97.6	+1.3	0.8	0.087
Post-high school	64.0	66.5	+2.5	2.3	0.276	93.1	93.9	+0.8	1.0	0.435	99.0	98.7	-0.3	0.4	0.390
Size/type of community															
Low metro	34.8	38.0	+3.2	5.9	0.589	73.0	78.5	+5.5	4.2	0.194	93.2	91.4	-1.8	2.4	0.441
Extreme rural	56.9	48.5	-8.4	6.1	0.168	87.3	80.3	-7.0	3.9	0.073	97.8	94.3	-3.5*	1.7	0.036
Small places	52.9	55.0	+2.1	3.5	0.549	86.5	88.5	+2.0	1.9	0.294	97.1	97.7	+0.6	0.9	0.483
Medium city	58.1	55.7	-2.4	3.4	0.478	87.5	85.5	-2.0	2.8	0.484	97.0	96.4	-0.6	1.1	0.589
Main big city	56.4	52.4	-4.0	7.9	0.617	79.9	85.9	+6.0	4.7	0.201	96.8	97.0	+0.2	1.5	0.897
Urban fringe	61.6	63.4	+1.8	5.2	0.682	91.3	95.0	+3.7	2.2	0.095	98.7	99.1	+0.4	0.9	0.660
High metro	74.6	66.4	-8.2*	3.8	0.032	95.4	92.6	-2.8	3.3	0.401	99.1	99.4	+0.3	0.8	0.711

*Significant: The probability is no greater than 0.050 that the change is due to random error.

Exhibit D-6

Percentages of Success for the Unique Exercises on Which 17-Year-Old Students Performed Extremely Low Consistently

On three exercises given in the Mini-Assessment of Functional Literacy (MAFL), all groups of 17-year-old students performed well below the typical MAFL level. For each of these three exercises -- (1) an automobile insurance policy statement asking for the amount of bodily liability coverage, (2) a book-club membership application asking for the amount of money to send in with the application and (3) a traffic ticket asking for the date by which the fine must be paid -- Exhibit D-6 gives the percentage of success for each group in 1971, 1974 and 1975.

EXHIBIT D-6. Percentages of Success for the Unique Exercises on Which 17-Year-Old Students Performed Extremely Low Consistently

Variable Group	Ins. Policy Bodily Liability			Book-Club App. Money To Send In			Traffic Ticket Date To Be Paid		
	1971	1974	1975	1971	1974	1975	1971	1974	1975
National	18.9	17.5	18.1	44.7	43.7	43.3	41.3	46.6	49.0
Region									
Southeast	14.6	10.9	16.5	43.9	42.6	42.9	38.1	42.1	39.5
West	16.9	14.4	16.3	41.7	41.3	46.8	35.6	46.4	53.0
Central	24.4	22.0	21.1	47.3	44.6	40.2	48.4	51.4	49.8
Northeast	17.9	19.1	17.9	45.1	45.4	43.9	40.5	44.8	52.5
Sex									
Male	21.9	23.1	25.1	42.3	42.2	42.2	43.5	46.7	50.0
Female	15.7	11.8	11.8	46.8	45.2	44.4	39.5	46.5	48.2
Race									
Black	10.0	6.9	11.7	33.5	36.6	37.1	23.5	27.5	28.8
White	20.2	19.1	19.2	46.1	44.7	44.1	43.6	51.2	51.5
Parental education									
No high school	13.8	13.3	8.4	45.7	42.4	47.5	33.1	30.0	50.8
Some high school	15.7	14.4	11.4	43.3	45.9	34.4	28.4	42.8	44.2
Graduated high school	17.1	16.8	17.0	46.2	42.8	40.9	39.9	46.1	46.7
Post-high school	22.9	19.7	21.5	45.2	45.2	45.8	47.2	51.1	52.2
Size/type of community									
Low metro	10.0	13.0	18.8	46.7	46.1	42.2	30.0	36.1	39.1
Extreme rural	18.8	14.6	17.0	47.7	44.2	40.5	36.1	51.1	44.8
Small places	20.0	19.4	19.8	44.9	41.4	45.9	36.7	44.2	46.7
Medium city	19.4	12.8	18.7	44.0	38.2	43.9	46.8	48.8	53.9
Main big city	13.3	27.6	14.0	42.4	46.9	41.3	45.0	50.5	57.0
Urban fringe	20.2	15.0	17.7	43.2	48.1	43.0	45.6	45.7	50.1
High metro	23.7	19.4	15.6	46.1	49.3	39.5	50.5	58.5	52.9

Exhibit D-7

Percentages of Success for the Unique Exercises on Which 17-Year-Old Student Performance Declined Markedly From 1971 to 1975

On three exercises given in the Mini-Assessment of Functional Literacy (MAFL), the performance of most groups of 17-year-old students declined markedly. Only on one of the exercises did one group equal its 1971 performance in 1975. The patterns and extent of declination vary from group to group. For each of these three exercises -- (1) a passage about Colorado mountains asking which sentence does not belong with the others, (2) a report card asking on which subject the recipient was improving and (3) a billboard asking where the sign might be seen -- Exhibit D-7 shows the percentage of success for each group in 1971, 1974 and 1975.

EXHIBIT D-7. Percentages of Success for the Unique Exercises on Which 17-Year-Old Student Performance Declined Markedly

Variable Group	Passage-Colo. Mts. Sent. Doesn't Belong			Report Card Subj. Improving			Sign-Horsepower Where See Sign		
	1971	1974	1975	1971	1974	1975	1971	1974	1975
National	74.6	68.6	67.9	80.4	73.7	68.3	76.5	74.8	69.0
Region									
Southeast	69.7	61.9	67.6	68.2	64.9	53.7	70.1	68.3	62.4
West	71.2	69.7	65.8	80.5	74.7	69.3	75.7	75.4	70.8
Central	78.6	74.8	70.6	85.1	74.9	75.0	80.8	80.8	71.6
Northeast	76.4	64.5	67.0	84.0	77.5	71.7	77.2	72.3	70.0
Sex									
Male	69.5	62.1	63.7	76.4	73.7	66.7	81.2	79.8	75.3
Female	79.1	75.2	71.8	83.9	73.7	69.6	71.8	70.3	63.7
Race									
Black	52.9	48.9	51.1	53.9	45.6	31.6	49.8	48.1	37.8
White	77.5	71.3	71.5	83.8	78.8	72.9	80.2	80.2	73.2
Parental education									
No high school	60.6	57.6	50.4	54.7	62.7	43.7	63.7	64.4	50.4
Some high school	68.5	60.1	55.4	74.9	63.6	56.7	58.3	64.8	55.9
Graduated high school	74.0	67.7	66.5	80.8	73.0	66.8	75.5	72.2	68.0
Post-high school	80.4	74.1	75.0	87.3	81.0	76.7	85.9	82.8	76.7
Size/type of community									
Low metro	63.5	50.5	55.8	72.4	53.9	52.1	56.2	55.4	56.2
Extreme rural	73.1	77.1	66.1	66.5	71.8	56.3	70.1	79.3	57.4
Small places	73.5	69.7	67.9	77.8	75.8	67.9	78.0	73.8	71.4
Medium city	76.2	68.7	72.6	83.9	73.4	66.4	75.1	82.3	66.7
Main big city	74.6	69.5	57.9	84.9	75.6	56.2	79.4	76.4	67.4
Urban fringe	76.9	66.7	72.4	85.5	79.1	83.0	75.8	73.3	72.8
High metro	82.5	76.2	74.2	86.6	86.0	77.8	87.9	86.5	78.6

Exhibit D-8

Percentages of Success for the Unique Exercises on Which 17-Year-Old Student Performance Improved Markedly

On four exercises given in the Mini-Assessment of Functional Literacy (MAFL), the performances of most groups of 17-year-old students improved markedly. On all four exercises, all groups in 1975 were performing above their 1971 levels. The patterns and extent of improvement vary from group to group. For each of these four exercises -- (1) a help wanted ad asking how to apply, (2) a help wanted ad asking the meaning of "Equal Opportunity Employer," (3) a coupon asking to whom the product appeals and (4) a coupon asking what sizes of the product the coupon was good for -- Exhibit D-8 gives the percentage of success for each group in 1971, 1974 and 1975.

EXHIBIT D-8. Percentages of Success for the Unique Exercises on Which 17-Year-Old Student Performance Improved Markedly

Variable Group	Help Wanted Ad: How Apply?			Help Wanted Ad: Equal Opp. Emp.			Coupon: Product Appeals To			Coupon: Size(s) Good For		
	1971	1974	1975	1971	1974	1975	1971	1974	1975	1971	1974	1975
National	77.0	78.8	90.6	84.7	79.8	94.7	87.5	93.8	94.1	71.4	79.6	79.2
Region												
Southeast	66.3	69.3	86.4	79.8	66.1	91.4	86.6	95.2	93.1	59.9	69.3	73.7
West	77.6	72.4	93.7	81.6	71.3	97.0	85.8	94.2	95.7	63.3	75.5	73.6
Central	79.6	84.1	90.8	87.2	87.6	94.4	88.7	94.4	92.9	82.2	85.5	84.0
Northeast	82.6	84.5	91.0	88.8	87.1	95.7	88.2	91.6	94.9	74.8	85.0	83.2
Sex												
Male	75.6	78.1	91.0	82.6	78.5	93.4	84.9	92.9	93.7	67.3	76.5	74.9
Female	78.5	79.5	90.3	86.8	81.1	95.8	89.9	95.2	94.4	75.3	82.3	82.9
Race												
Black	58.5	51.7	80.7	66.2	57.7	87.9	81.6	87.6	90.7	52.7	55.4	58.0
White	79.6	82.2	92.6	87.7	82.5	96.0	88.3	94.8	94.4	74.2	84.9	82.8
Parental education												
No high school	65.4	64.8	80.6	73.0	64.0	88.2	85.9	91.5	92.9	51.4	67.7	69.0
Some high school	66.0	67.8	80.3	78.3	68.7	87.8	87.3	90.1	92.0	67.2	70.6	66.6
Graduated high school	75.7	78.6	91.3	83.8	79.2	95.9	87.7	94.1	93.8	73.6	78.9	80.6
Post-high school	85.1	84.3	95.4	91.8	85.5	97.3	88.5	95.7	95.3	74.6	85.7	83.9
Size/type of community												
Low metro	71.9	74.1	83.0	75.9	79.8	89.7	87.1	88.8	89.2	64.8	62.2	66.4
Extreme rural	65.9	62.0	89.8	77.6	66.2	89.8	86.7	95.6	92.6	70.5	81.3	71.0
Small places	76.6	80.5	89.0	84.8	75.7	94.5	87.7	93.8	95.8	68.1	81.8	78.6
Medium city	78.5	80.7	89.0	85.4	81.7	94.8	84.3	94.8	93.8	74.3	80.1	80.9
Main big city	71.3	75.7	93.3	81.0	83.5	95.5	85.9	92.8	92.7	73.5	81.0	84.1
Urban fringe	78.2	85.3	96.4	88.0	88.5	97.7	91.0	94.8	93.9	74.3	81.6	82.2
High metro	89.7	84.4	95.4	96.6	84.7	98.6	89.7	96.6	94.4	76.0	88.4	86.3